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EXAMINER

JERABEK, KELLY L

ART UNIT

PAPER NUMBER

2612

DATE MAILED: 06/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/702,788

Applicant(s)

VERGHESE, GILBERT

Examiner

Kelly L. Jerabek

Art Unit

2612

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-55 is/are pending in the application.
- 4a) Of the above claim(s) 48-55 is/are withdrawn from consideration.
- 5) ☐ Claim(s) 16-22, 26 and 42-45 is/are allowed.
- 6) ☒ Claim(s) 1-15, and 27-41 is/are rejected.
- 7) ☐ Claim(s) 23-25, 46 and 47 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 September 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. <u>5</u> . |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>2</u> . | 6) <input type="checkbox"/> Other: _____. |

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-47, drawn to an image tracking system is classified in class 348, subclass 169.
- II. Claims 48-52 drawn to a tension regulation device is classified in class 474, subclass 101.
- III. Claims 53-55 drawn to a tendon motor pulley is classified in class 474, subclass 152.

The inventions are distinct, each from the other because of the following reasons:

Inventions I, II, and III are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case invention I is an image tracking system, invention II is a tension regulation device for controlling the amount of tension applied to a tendon, and invention III is a tendon motor pulley for coupling a tendon length to a motor shaft.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and the search required for Groups I, II, and III are entirely different, restriction for examination purposes as indicated is proper.

A telephone call was made to Isis Caulder of Bereskin & Parr on 5/14/04 to request an oral election to the above restriction requirement, and group I pertaining to claims 1-47 were elected.

Claims 48-55 withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected inventions, there being no allowable generic or linking claim. Election was made **without** traverse.

Claim Objections

Claims 23-25 and 46-47 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims have not been further treated on the merits.

Specification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 40 and 41 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 40 recites the limitation "the minor rotation axis" and "the major rotation axis" in lines 13 and 14 of page 45. There is insufficient antecedent basis for this limitation in the claim.

Claim 41 recites the limitation "the major rotation axis" and "said first shaft rotation axis" in lines 15 and 16 of page 45. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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Claims 1, 5-7, 10-12, 14-15, 27-30, 35, and 37-41 are rejected under 35 U.S.C. 102(e) as being anticipated by Wada et al. US 6,714,236.

Re claim 1, Wada discloses in figures 9 and 10 a composite camera for use in a security camera system. The security camera system includes a pair of supports (113) for holding the image capture device (102) (col. 2, lines 63-67). In addition, the security camera system includes a processing device (70) that detects a motion from the pictures taken by a composite camera (61) and checks the current monitoring place of the composite camera (61) thus determining an object location value for the object

Art Unit: 2612

based on digital images (col. 9, lines 44-53). The composite camera (61) serves as a position control device for rotating the supports (113) and the image capture device (102) about two axes so that the object remains within a center region of the digitized image frames and it is coupled to the support (113) (figs. 9,10) (col. 9, lines 49-63). The composite camera (61) includes a base (107), a first motor (24) mounted on the base (107) for generating a first rotational movement (pan) based on the object location and a first rotational member (103) connected to the first motor (24) for rotation about a first axis (col. 2, line 63 - col. 3, line 57). Additionally, the composite camera (61) includes a second motor (28) mounted on the base (107) for generating a second rotational movement (tilt) based on the object location and a second rotational member (105) connected to the second motor (28) for rotation about the second axis (col. 2, line 63 – col. 3, line 57).

Re claim 5, the first axis (pan axis) provides a horizontal rotation and the second axis (tilt axis) provides a vertical rotation, therefore they are orthogonal to each other (figs. 9, 10; col. 1, lines 15-20).

Re claim 6, the cylindrical camera base (107) is adapted to rest on a support surface (ceiling) and it houses first (24) and second (28) stationary motors (col. 3, lines 29-41).

Art Unit: 2612

Re claim 7, the rotation controlling mechanism (swivel base block) is a mounting member for securing the first motor (24) and the second motor (28) (col. 3, lines 36-41). The mounting member is on the inside of the composite camera (61), therefore it is attached to the base member (107) since the base member (107) serves as the housing (col. 3, lines 5-7).

Re claim 10, see claim 1.

Re claim 11, the first axis (pan axis) is stationary because the composite camera is attached to a ceiling (col. 3, lines 30-35; fig. 10).

Re claim 12, the first axis (pan axis) can pan the composite camera 360 degrees therefore it is a major rotation axis and the second axis (tilt axis) can tilt the composite camera 180 degrees therefore it is a minor rotation axis (col. 2, lines 54-59; figs. 9, 10).

Re claim 14, the image capture device (102) is a security camera that produces video signals therefore it is a video camera (col. 2, line 63 – col. 3, line 17).

Re claim 15, the processing device (70) is a controller that includes a CPU (71) (col. 9, lines 44-53).

Re claim 27, see claim 1.

Re claim 28, when a moving picture detector (80) detects a motion in the pictures taken by the composite camera the CPU (71) of the controller (70) checks the current position of the camera (col. 9, lines 44-53). The controller (70) then transfers the motion point to the composite camera (61), enabling the composite camera (61) to be focused at the motion point (col. 9, lines 54-59). Therefore, an object center location (motion point) for the object in the picture is determined. The composite camera (61) controls panning and tilting in order to set the motion point in the center of the screen and the composite camera (61) is focused on the object in the center of the screen (col. 9, lines 59-63). Since the camera is panned and tilted to direct the motion point to the center of the screen, frame center location values (screen center) are determined and the object center location values (motion point) and frame center location values (screen center) are compared to determine the amount of rotation necessary to keep the object within the center region.

Re claim 29, the digitized image frames (pictures) contain object images such as people or animals (col. 9, lines 23-43).

Re claim 30, the controller (70) transfers a motion point to the composite camera (61), enabling the composite camera (61) to be focused at the motion point (col. 9, lines 54-59). Therefore, an object center location (motion point) for the object in the picture is

Art Unit: 2612

determined. Furthermore, the centroid of the object image is determined in order to focus the camera at the detected motion point.

Re claim 35, see claim 14.

Re claim 37, the composite camera (61) includes a first motor (24) mounted on the base (107) for generating a first rotational movement (pan) based on the object location and a first rotational member (103) connected to the first motor (24) for rotation about a first axis (col. 2, line 63 - col. 3, line 57). Additionally, the composite camera (61) includes a second motor (28) mounted on the base (107) for generating a second rotational movement (tilt) based on the object location and a second rotational member (105) connected to the second motor (28) for rotation about the second axis (col. 2, line 63 – col. 3, line 57).

Re claim 38, the first axis (pan axis) can pan the composite camera 360 degrees therefore it is a major rotation axis and the second axis (tilt axis) can tilt the composite camera 180 degrees therefore it is a minor rotation axis (col. 2, lines 54-59; figs. 9, 10).

Re claim 39, see claim 37.

Re claim 40, the first axis (pan axis) can pan the composite camera 360 degrees therefore it is a major rotation axis and the second axis (tilt axis) can tilt the composite

Art Unit: 2612

camera 180 degrees therefore it is a minor rotation axis (col. 2, lines 54-59; figs. 9, 10).

Additionally, the minor rotation axis (tilt axis) rotates about the major rotation axis (pan axis) (fig. 9).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 36 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wada et al. US 6,714,236.

Re claim 36, the examiner takes Official Notice that it is well known in the art for multiple cameras to be used in image tracking. It would have been obvious to one of ordinary skill in the art at the time of invention for the security system disclosed by Mori to include multiple composite video cameras.

Re claim 41, the major rotation axis is stationary relative to the first shaft rotation axis (figs. 9, 10).

Claims 2-4, and 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wada as applied to claims 1 and 7 in view of Kahn US 5,802,412.

Re claim 2, Wada discloses all of the limitations according to claim 1 above, however Wada fails to disclose the specific components of the first motor (24) and the second motor (28).

Kahn shows in figure 2 a cross-sectional front view of a pan/tilt mount used for panning and tilting a camera (col. 3, lines 24-25). The pan/tilt mount is driven by a pan motor (20) and a tilt motor (19) (col. 4, lines 53-56). The first motor (20) includes a first shaft member (41) having an axis that is concentric with the first shaft member (41) and the second motor (19) includes a second shaft member (32) having an axis that is concentric with the second shaft member (32) (col. 3, lines 48-53; col. 4, lines 12-18; fig. 2). Also, the axis of the first shaft member (41) and the axis of the second shaft member (32) are motionless and fixed relative to one another since when the first shaft member (41) rotates and starts a pan action the second shaft member (32) rotates relative to the first shaft member (col. 3, line 24 – col. 4, line 34; fig. 2). Therefore, it would have been obvious for one skilled in the art to have been motivated to include the pan and tilt motor configuration as taught in Kahn in the composite camera for use in a security system as disclosed by Wada. Doing so would provide a means for panning

Art Unit: 2612

and tilting having small payloads and providing capabilities such as positional accuracy and high speed (Kahn: col. 2, lines 19-24).

Re claim 3, the pan/tilt mount disclosed by Kahn includes a worm wheel (39) and a worm gear (40) for coupling the first motor (20,41) to a first rotatable member (35) (col. 4, lines 5-7; fig. 2). The pan/tilt mount also includes a worm wheel (30) and a worm gear (31) for coupling the second motor (19,32) to a second rotatable member (25) (col. 3, lines 48-50).

Re claim 4, Kahn shows in figure 2 that the second axis (tilt axis) rotates about the first rotation axis (pan axis) during the rotation of the first rotatable member (35). Also, the worm wheel (30) and worm gear (31) is aligned with the first rotation axis (pan axis) so that rotation of the first rotatable member (35) about the first rotation axis (pan axis) occurs without any relative motion between the first rotatable member (35) and the second rotatable member (25). This is true because when the first rotatable member (35) rotates and starts a pan action the second rotatable member (25) rotates relative to the first rotatable member (35) (col. 3, line 24 – col. 4, line 34; fig. 2).

Re claim 8, Wada discloses all of the limitations according to claim 7 above, however Wada fails to state the specifics of the first motor (24) and the second motor (28) specifically Wada fails to state that the mounting member includes a first vertical shaft member for engaging a first rotatable member (17).

Art Unit: 2612

Kahn shows in figure 2 a cross-sectional front view of a pan/tilt mount used for panning and tilting a camera (col. 3, lines 24-25). The pan/tilt mount includes a pan housing (15) that includes a vertical shaft member (35) for engaging a tilt housing (17) in order to perform a panning operation (col. 3, line 60 – col. 4, line 15; fig. 2).

Therefore, it would have been obvious for one skilled in the art to have been motivated to include the pan and tilt motor configuration as taught in Kahn in the composite camera for use in a security system as disclosed by Wada. Doing so would provide a means for panning and tilting having small payloads and providing capabilities such as positional accuracy and high speed (Kahn: col. 2, lines 19-24).

Re claim 9, the tilt housing (17) disclosed by Kahn includes a cylindrical hollow cavity for rotably receiving the vertical shaft member (35) (fig. 2).

Claims 13, 31, and 33-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wada in view of Morisaki US 5,416,513.

Re claim 13, Wada discloses all of the limitations according to claim 1 above, however Wada fails to state that the object selected is associated with a specific color and the object location is the center of the region of the selected color within the digitized frame.

Morisaki discloses in figure 1 a video camera system including an object pursuing device. The video camera (1) of the system is moved according the

Art Unit: 2612

movement of the specific color of the object so that the object is always in the center portion of the image (col. 6, line 37 – col. 7, line17). This shows that the object has a selected color and the object location is the centroid of the region of the selected color of the digitized frame. Therefore, it would have been obvious for one skilled in the art to have been motivated to include the video camera system capable of moving a camera according to the color of an object as taught in Morisaki in the composite camera for use in a security system as disclosed by Wada. Doing so would provide a means for pursuing an object by utilizing a specific color picked up from a shooting object (Morisaki: col. 2, lines 6-9).

Re claim 31, see claim 13.

Re claim 33, the video camera (1) of the system is moved according the movement of the specific color of the object so that the object is always in the center portion of the image (col. 6, line 37 – col. 7, line17). Therefore, the centroid of the digitized image must be calculated in order to move the video camera (1) so that the object is always in the center portion of the image.

Re claim 34, see claim 33.

Claim 32 rejected under 35 U.S.C. 103(a) as being unpatentable over Wada in view of Morisaki as applied to claim 31 above and further in view of Potts et al. US 6,593,956.

Re claim 32, Wada in view of Morisaki discloses all of the limitations according to claim 31 above, however Wada in view of Morisaki fails to distinctly stat that the step of determining the object center location values for the object includes locating a pixel at the center of a group of pixels within a region of a selected color.

Potts discloses in figure 9 a flowchart of the steps taken by a face-location tracking module (106) of a camera-pointing module. The camera-pointing module is capable of panning and tilting a camera in order to track an object (col. 13, lines 25-36). The face-location tracking module (106) of the camera-pointing module determines the location of the pixel that represents the center of a detected face (col. 14, lines 12-37). Therefore, it would have been obvious for one skilled in the art to have been motivated to include the face-location tracking module (106) capable of locating a pixel in the center of a group of pixels as taught in Potts in the composite camera for use in a security system as disclosed by Wada in view of Morisaki. Doing so would provide a means for tracking a detected object in order to obtain a proper position of the object (col. 7, line 66 – col. 8, line 7).

Allowable Subject Matter

Claims 16-22, 26, and 42-45 allowed.

The following is a statement of reasons for the indication of allowable subject matter: the prior art of record fail to anticipate or render obvious the following technical features as recited in the highlighted claims:

- a. "...a third rotatable member comprising the first support and a fourth rotatable member comprising the second support, said third and fourth rotatable members being mounted on the second rotatable member, at least one of said third and fourth rotatable members being rotably mounted to said second rotatable member; and a third motor mounted on the base for providing relative rotation between said third and said fourth rotatable members" as recited in claim 16. Claims 17 – 22, and 26 are dependent on claim 16 and are allowable for the reasons stated above.
- b. "...wherein step (c) further comprises providing a third rotational movement to the image capture device about a third axis using a third motor and providing a third rotational movement to the image capture device about a fourth axis using a fourth motor such that the object remains within a center region of each of the digitized frames" as recited in claim 42. Claims 43-45 are dependent on claim 16 and are allowable for the reasons stated above.


Contacts

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kelly L. Jerabek whose telephone number is 703-305-8659. The examiner can normally be reached on Monday - Friday (8:00 AM - 5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on 703-305-4929. The fax phone number for submitting all Official communications is 703-872-9306. The fax phone number for submitting informal communications such as drafts, proposed amendments, etc., may be faxed directly to the Examiner at 703-746-3059.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KLJ


NGOC-YEN VU
PRIMARY EXAMINER